Atty. Dkt. No. 99PS017/KE

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow. Claim 6 and 19 have been amended. Claims 1-26 stand rejected. Accordingly claims 1-26 remain pending in the application. Claims 6 and 19 are amended to correct typographical errors. No new matter is added. The amendments to claims 6 and 19 are non-limiting.

As a preliminary matter, the Examiner rejected claim 6 under 35 U.S.C. § 112, & 2 in paragraphs 1 and 2 of the Office Action. The Examiner states that "there is insufficient antecedent basis for the limitation in the claim." Applicants have amended claim 6 in accordance with the Examiner's suggestion. Accordingly withdrawal of the rejection of claim 6 under 35 U.S.C. § 112 & 2 is respectfully requested.

In paragraphs 3 and 4 of the Office Action, claims 1-2, 7-12, and 19 are rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 5,644,363 (Mead). The Examiner states:

> Referring to claims 1-10 and 19, Mead teaches a system for generating subliminal visual messages synchronized to a video signal, and superimposing those messages through a programmably variable modulation of brightness of another video signal (col. 2, lines 48-52). Subliminal messages are generated by the key cartridge 17, and the subliminal message generator generates and superimposes subliminal messages upon the video signal from the VCR 10 to form either a video output (32 on FIGS. 2 and 3) or an the video component of an RF-modulated television signal output 18 (col. 3, lines 46-47 and 53-57). As shown in Fig. 2, Mead teaches the video message generator 22 data output 23 is connected to a control input of a high-speed switch 24. This switch selects either a constant 25 signal or the output of an integrator 26. When the constant 25 is selected the screen intensity of the television 20 will have a first value and when the integrator output is selected the screen intensity will have a

> second value dependent on the voltage output of the integrator 26. The integrator 26 output is a function of the width of a pulse-width modulated signal 29. A processor 27 drives a pulse-width modulator (PWM) 28 which produces the pulse-width modulated signal 29 (col. 4, lines 3-13) and from then to the video output . . . .

Applicants respectfully traverse the rejection.

In paragraphs 5-6 of the Office Action, claims 3-4, 13-14, and 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of U.S. Patent No. 6,249,913 (Galipeau). The Examiner states:

> Referring to claims 3-4, 13-14, and 20-21, as applied to claims 1 and 10 above, Mead teach all the limitations of claims 3 and 4 except for the electronic system comprises a commercial airline display unit (LCD unit).
>
> However, Galipeau et al. teach an aircraft data management system including video, audio subsystem, wherein additional video inputs including a map of the flight route with the aircraft superimposed over its present position, television programs or a camera providing a view similar to that of the aircraft pilot may be offered to the passenger (col. 11, lines 31-34), and the system also comprises a channel select display 128 (Fig. 7) is in the form of a backlit liquid crystal display (LCD) with a back lighting level that automatically adjusts for the ambient lighting conditions (co. 7, lines 46-49).

Applicants respectfully traverse the rejection.

In paragraph 7 of the Office Action, claims 5 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of U.S. Patent No. 4,831,438 (Bellman.). The Examiner states:

> Referring to claims 5 and 18, as applied to claim 1 and 10 above, Mead teaches all the limitations of claims 5 and 18, except for the static signal is a 28 Volt DC.

> However, 28 Volt DC is the standard on-board power for aircraft, as disclosed in prior art, one of which is U.S. Patent No. 4,831,438 to Bellman et al. As disclosed, Bellman et al. teach an electronic surveillance system having a command and control unit 400 for controlling video input/output and a monitor 488 for displaying in real-time the video signal. Also, a suitable time/date character generator is also included in the CCU 400 for superimposing one or two lines of text on the surveillance video near the bottom of the frame (col. 4, lines 28-34). Bellman et al. further teach the power unit 310 provides automatic switching between any available power source, including the standard 28 VDC aircraft power bus, an auxiliary power unit, and the battery-backup unite 330 (col. 4, lines 6-10).
>
> Therefore, it would have been obvious to one skilled in the art to utilize the method superimposing image using 28 volt DC as taught by Bellman et al. in combination with the method of superimposing image as taught by Mead in order to conform with the standard aircraft power.

Applicants respectfully traverse the rejection.

In paragraph 8, claims 15 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of Galipeau et al. and U.S. Patent No. 5,953,429 (Wakai). The Examiner states:

> To claims 15 and 22, as applied to claims 13 and 20 above, Mead and Galipeau et al. teach all the limitations of claims 15 and 22, except for the receiving circuit is coupled to a commercial airline tapping unit.
>
> However, Wakai et al. teach a passenger entertainment system, which employs an improved audio signal distribution system and method, for use in commercial aircraft and other vehicles, wherein, as shown in Fig. 3, the video modulator unit (VMU) 124 is coupled to a plurality of tapping units (Tus) 132 which are, in turn, coupled to a plurality of video projectors or video monitors 118 (col. 10, lines 24-27).

> Therefore, it would have been obvious to one skilled in the art to utilize the tapping unit in the in-flight entertainment system as taught by Wakai et al. in combination with the system as taught by Mead and Galipeau et al. as cited above in order to tap off a small portion of the composite RF video signal generated by the video modulator unit and to pass the remaining portion of the composite RF video signal to the next tapping unit 132 along a given daisy-chain with only a small amount of signal loss (col. 10, lines 49-53).

Applicants respectfully traverse the rejection.

In paragraph 9 of the Office Action, claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of Galipeau et al. and U.S. Patent No. 4,398,171 (Dahan.). The Examiner states:

> As applied to claim 20 above, Mead and Galipeau et al. teach all the limitations of claim 23 except for the circuit for retrieving superimposed data comprising a comparator.
>
> However, Dahan et al. teach a method for superimposing an image over another wherein the circuit comprises a comparator 46 (Fig. 5) for comparing the samples of identical location in the two memories and produces a 1 at the output in the event of a positive comparison (col. 3, lines 58-61).
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> Therefore, it would have been obvious to one skilled in the art to utilize the method of receiving superimposed data as taught by Dahan et al. in combination with the method as taught by Mead and Galipeau et al. above in order to compare the inputs (col. 3, lines 62-64).

Applicants respectfully traverse the rejection.

In paragraph 10 of the Office Action, claim 24 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of Galipeau et al. and further in view of U.S. Patent No. 6,393,053 (Maier). The Examiner states:

> Referring to claim 24, as cited above, Mead and Galipeau et al. teach all the limitations of claim 24

> except for the receiving circuit comprising an optocoupler.
>
> However, optocouplers are commonly used in the art for use as a switch with a beam of light as disclosed in US 6,393,053 to Maier. Maier teaches a digital output unit having an optocoupler for transmitting the status and wire breakage information (col. 1, lines 30-32).
>
> Therefore, it would have been obvious to one skilled in the art to utilize the optocoupler as taught by Maier in combination with the system for superimposed signals as taught by Mead and Galipeau et al. in order to improve performance of digital input units with multiple input channels (col. 1, lines 33-35).

Applicants respectfully traverse the rejection.

In paragraph 11 of the Office Action, claims 16-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mead in view of ARINC Characteristic 722 (ARINC). The Examiner states:

> Referring to claims 16 and 17, as applied above in claim 10, Mead teaches all the limitations of claims 16-17 except for the static signal is further coupled to a 28 Volt "on indicator" signal on pin 18 of an ARINC 722 connector. However, as illustrated in the specification of ARINC 722 connector (Attachment 2, page 16), pin 8 of ARINC 722 is an "on indicator" 28 Volt DC.
>
> Therefore, it would have been obvious to one skilled in the art to utilize pin 8 "28 Volt on indicator" of ARINC 722 connector as a static signal for superimposed signals to display on as taught by Mead in order to generate superimposed messages on a projection video system on airline.

Applicants respectfully traverse the rejection.

In paragraph 12 of the Office Action, claims 25-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Galipeau et al. in view of U.S. Patent No. Wakai et al. and further in view of ARINC. The Examiner states:

Referring to claims 25 and 26, Galipeau et al. teach an aircraft data management system including video, audio subsystem, wherein additional video inputs including a map of the flight route with the aircraft superimposed over its present position (status reporting), television programs or a camera providing a view similar to that of the aircraft pilot may be offered to the passenger (col. 11, lines 31-34). As shown in Fig. 6, Galipeau et al. teach the system further comprises a video module 152 also transmits data back to the head end via data network interface module 114 enabling the passenger to select a desired video (col. 9, lines 26-28). Thus, Galipeau et al. teach all the limitations of claims 25 and 26 except for the system further comprises a tapping unit and the status reporting circuit coupled to the tapping unit along pin 8 of ARINC 722 connector.

However, Wakai et al. teach a passenger entertainment system, which employs an improved audio signal distribution system and method, for use in commercial aircraft and other vehicles, wherein, as shown in Fig. 3, the video modulator unit (VMU) 124 is coupled to a plurality of tapping units (Tus) 132 which are, in turn, coupled to a plurality of video projectors or video monitors 118 (col. 10, lines 24-27).

Therefore, it would have been obvious to one skilled in the art to utilize the tapping unit in the in-flight entertainment system as taught by Wakai et al. in combination with the system as taught by Galipeau et al. in order to tap off a small portion of the composite RF video signal generated by the video modulator unit and to pass the remaining portion of the composite RF video signal to the next tapping unit 132 along a given daisy-chain with only a small amount of signal loss (col. 10, lines 49-53).

Applicants respectfully traverse the rejection. Mead, Maier, Galipeau, Bellman, Wakai, Dahan and ARINC are referred to below as the cited art.

The present Invention provides a system which superimposes data on a static signal. Each of independent claims 1, 10, 19, 25 and 26 specifically recites a static signal.

Claim 1 recites:

> An apparatus for providing data superimposed on a static signal . . . said modulating circuit for providing the static signal unaltered when the modulating circuit is not receiving the data to be superimposed on the static signal and for producing deviations in the static signal dependent on said data received from the electronic system.

Claim 10 recites:

> A method of collecting data from an electronic system by superimposing data upon a static signal, the method comprising steps of: . . . modulating the static signal according to the aggregated data to produce a varying data signal superimposed on the static signal.

Independent claim 19 recites:

> An electronic system for collecting data from a first electronic sub system using a static signal . . . the electronic system comprising:
>
> a modulation circuit connected to receive data from said first electronic sub system for superimposing said data on said static signal.

Independent claim 25 recites:

> A status monitoring system . . . comprising:
>
> said plurality of status signal superimposed on a static display-on indicator.

Independent claim 26 recites:

> A status monitoring system . . . comprising:
>
> said plurality of status signal superimposed on a static display-on indicator.

Superimposing data on a static signal provides significant advantages to electronic systems and particularly for avionics systems. See present application, page 10, lines 7-9. The use of superimposed data on a static signal overcomes problems associated with using ARINC 722 connectors and retrofitting existing systems. The present application states:

> The problem of providing operating status and display unit information is compounded by the fact that display units are currently wired through ARINC 722 connectors in a large number of currently deployed aircraft. Adding additional data connections would involve replacement of ARINC 722 connectors with another type of connector or adding an additional connector. In addition, further difficulties are encountered because additional connectors and additional data lines may not be present in current aircraft. Adding additional wires to the current connector or adding an additional connector may involve major rewiring of the aircraft at great expense. In addition to the expense of rewiring, some manufacturers, such as Airbus Industries, require that when any rewiring of an aircraft takes place the aircraft must be recertified. The expense of aircraft rewiring, the additional down time of the aircraft and the expense of recertification of the aircraft makes any such additional wiring costly. . . .

See present application, page 5, lines 8-18.

Applicants note that static signals are discussed throughout the present application. The present application describes one embodiment of a static signal as follows:

> In general, there are two types of status signals. The first type may be referred to as a "static" status signal. A "static" status signal is one that continually indicates the status of a parameter. An example of a "static" status signal is the "on indicator" signal on pin 8 of an ARINC 722 connector. . . .

See present application, page 14, lines 5-13. Using a static signal allows data to be advantageously transmitted on existing lines without affecting dynamic signals such

as video signals. This is a significant advantage in electronic systems and especially avionic electronic systems.

None of the cited art shows, describes or suggests the use of superimposed data on a static signal. Mead merely describes superimposition of subliminal video instructions on a video signal. In fact, Mead describes the superimposition as being upon the video signal output of a VCR. See Mead, col. 3, lines 52-57. A video signal is clearly not a static signal as that term is used in the present application. A video signal is a highly dynamic signal which changes over very short periods of time. Mead does not even show the superimposition of the data on a non-video signal, much less a static signal. Indeed, Mead would not even contemplate such a technique because the superimposed data must be provided to a television for subliminal viewing. Therefore, Mead does not show, describe or suggest the superimposition of data on a static signal.

Bellman, Wakai, Galipeau, Dahan and ARINC do not provide for the deficiencies of Mead. Galipeau does not show superimposition of data on a static signal. Indeed, additional video inputs are required to provide the aircraft superimposed over its present position, television programs or a camera providing a view similar to that of the aircraft pilot. See Galipeau, col. 11, lines 31-34. If Galipeau contemplated superimposition of data on a static signal, additional video inputs would not be required.

Similar to Mead, Bellman describes superimposing text on the surveillance video. See Bellman, col. 4, lines 31-35. The video signal is displayed in real time. Superimposition on a static signal is not contemplated.

Dahan, Wakai and ARINC do not provide any discussion of superimposition of data on a static signal. Accordingly, , it is respectfully submitted that claims 1-26 are patentable over the cited art because none of the cited art provides a suggestion for data superimposed on a static signal.

Further, Applicants note that even if the combination of Mead with the remaining cited art taught each and every element of the present invention (for the sake of argument only), it is respectfully submitted that the rejection is improper

because Mead should not be combined with the remaining cited art. Mead teaches away from the present invention. As discussed above, Mead clearly teaches the provision of data on a dynamic video signal, precisely the opposite technique of providing data on a static signal. Accordingly, it is respectfully submitted that claims 1-26 are patentable over the cited art because Mead teaches away from the present invention.

With respect to claims 3-6, 14-18, 20 and independent claims 25 and 26, particular applications and/or particular status signals are recited in the claims. Applicants note that although ARINC discloses particular types of status signals and aircraft architecture, there is no discussion as to how the superimposition can be provided. As discussed above, although Mead, Galipeau and Bellman may describe superimposition of data on video signals, there is no description or suggestion as to which other types of signals superimposition can be applied.

As discussed above, although Mead, Galipeau and Bellman may describe superimposition of data on video signals, there is no description or suggestion for superimposition of data on other types of signals. Indeed, it is respectfully submitted that the Examiner is improperly using hindsight to apply the superimposition of signals to particular signals associated with ARINC without any suggestion in the cited art to do so. As discussed above, Mead teaches away from the provision of the data on a static signal as it utilizes superimposition on to the video signals. Accordingly, claims 3-6, 14-18, 20 25 and 25 are additionally patentable over the cited art.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

Atty. Dkt. No. 99PS017/KE

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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By _____

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